MEMO

To: Valerie Knepper, MTC

C: Case Study Cities

Date: April 18, 2007

From: Terri O'Connor/Bill Hurrell

Subject: Parking Profile and Policy Recommendations –Hercules

Introduction

This memorandum presents the tailored parking demand model results and associated recommendations for the Metropolitan Transportation Commission's (MTC) *Reforming Parking Policies to Support Smart Growth Study* for the City of Hercules. This memorandum includes a parking profile of the study areas based on parking demand, tailored parking rates developed by the parking demand model, as well as an overview of final policy recommendations.

Methodology

To estimate the parking demand generation of future developments in Hercules, WSA developed a parking model that combines pipeline land use predictions with calibrated demand rates for each use type. Pipeline project information provided by the City of Hercules yielded the set of land use types to be examined within the model. Next, peak parking generation rates derived from a variety of sources, including the Institute of Transportation Engineers (ITE) publication *Parking Generation*, the Urban Land Institute (ULI) publication *Shared Parking*, the General and Central Hercules Plan parking requirements, and previous Wilbur Smith Associates parking studies were assigned to each land use. These peak rates represent each use's theoretical demand at its heaviest use time and in the event that every patron drives alone.

These peak rates were subsequently reduced by a series of 'mode split factors' to account for trips made by residents and visitors who walk, bike or use public transit to reach their destination. These factors were derived by comparing Hercules' transit accessibility, land use mix, and demographics to other Bay Area case studies, as well as by analyzing recent census data for the area.

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Additional rate reduction factors were included for each land use based on time-of-day demand shifts (the model calibrates for the weekday midday demand peak) and captive market trips. Captive market trips are those for which the proximity of uses facilitates walking between activities rather than using a vehicle, thereby reducing the demand for parking. To prevent double counting of parking demand between uses amenable to captive trips, this concept was incorporated into a 'shared parking' factor which further reduces the peak rate. In Hercules, only the 'Retail' land use category includes this captive market trip adjustment, under the assumption that off-street residential spaces will prove largely non-shareable, and that office parking will house the cars of individuals who carpool, walk, bike, or take transit to retail uses during the lunch hour. Note that as the pipeline data provided by the City of Hercules makes no distinction between 'retail' and restaurant or service uses, the 'retail' rate also encompasses these other lunch-hour uses and is adjusted accordingly.

While the parking demand factors were initially based on standard industry sources, WSA analyst inspection of Hercules' particular pipeline development patterns refined them to further match the case study. The goals of the Hercules case study were to develop recommendations for the Sycamore downtown area. Since the commercial portions of the Hercules study areas were not built out at the time of the study, parking utilization data for existing conditions were not collected. As such, WSA looked to a series of downtowns and transit oriented developments based upon Hercules' vision of the Sycamore downtown to find where it would fit within a range of parking utilizations. This data was used as a proxy for the total demand for the study area land uses at the peak time.

Parking Profile

A parking profile was developed for Hercules based on the estimated current parking demand, expected economic growth, future pipeline projects and parking rates from the parking demand model.

Parking Rates

The existing utilization analysis coupled with current land use data provided the basis for developing parking generation rates. These were used to identify shared parking opportunities and complimenting land uses.

Peak Parking Factor

As the Hercules area develops from a primarily residential to a denser mixed use district, parking patterns will most likely exhibit a mid-day peak due to lunchtime retail and restaurant demand, as demonstrated in similar cities and case study areas. To accurately describe expected peak parking demand, the WSA model calibrates land use demand rates according to their prominence at weekday mid-day. Several land use categories typically exhibit peaks at different periods of the day and week. There is potential for shared parking where there are opposing peak demands between nearby land uses. Currently, Hercules does not have or project future land uses with significantly different peaks (morning, evening, weekend), resulting in reduction factors in this area that are lower than other cities. Typical off-peak uses would include theaters, churches, restaurants, hotel/motel and meeting places, and community meeting places.

Shared Parking Factors and Internal Trip Capture

The mixed use nature of the districts provides ample opportunity for internal trip capture (i.e. park once and walk to several destinations). This is highly likely to occur at the peak demand period of lunch time during the work week when local employees already parked walk to lunch and shopping destinations. This also depends on the character of the future commercial land uses. Internal trip capture or trip chaining is also common in the evening as employees run errands on their way home from work and on weekends as visitors combine shopping and restaurant trips. The primary use for the work week was considered to be office related.

Alternative Parking Rates

Parking rates in Table 1 indicate the demand based rates at the weekday mid-day peak, as well as the individual peak rates for each land use category at its heaviest use time.

The rates the City of Hercules adopts for major land uses based upon demand in the Sycamore district could range between the demand rates based upon peak demand for the district and the individual peak rates for the land use categories. For current uses that have distinct peaks but have demonstrated difficulty sharing parking, the higher value in the range should be considered. The range of rates should be provided in the parking code, but the final approval of the rate should be at the discretion of the planning department.

The parking rates that the City of Hercules has established in its Regulating Code for the Central Hercules Plan are actually somewhat lower than the rates estimated by the parking model. The rates estimated by the model are based on mixed use downtowns and TODs that are built out and have real parking utilization and mode split data. As such, the rates for Hercules may be low until the regional transit connection is fully realized. However, this does not mean the City should upwardly revise its requirements - if developers are concerned the lower parking requirements will impede the ability to finance and sell properties, they will likely increase parking supply by their own decision. The City may want to consider providing a range of minimum to maximum parking rates to prevent parking provision that exceeds a desired level. Any parking provided above the minimum requirement can be regulated such that it is required to be shared.

Table 1. Demand Based and Peak Based Parking Rates (parking/unit)

			Reduction Factors					District Peak Rates			Land Use Peak Rates				
Land Use	Unit	Base Rate	Peak	Walk	Bike	Transit	Shared Park	Total	ST	LT	Total	ST	LT	Zoning Ord.	Reg Code
Studio Apt.	DU	1.5	1	0	0	0	0	**1.5**	.15	1.35	**1.5**	.15	1.35	1.5	1.25
Multifam.	DU	1.7	1	0	0	0	0	**1.7**	.17	1.53	**1.7**	.17	1.53	1.5	1.25
Retail/ Comm.	kSF	5.5	0.9	.03	.03	.05	0.3	**2.92**	2.63	0.29	**3.245**	2.92	0.32	3.5-4.0	2.5
Office	kSF	4.0	0.8	.03	.03	.05	0	**2.85**	.85	2.0	**3.56**	1.07	2.49	3.0	3.3

Sources: Wilbur Smith Associates, April 2007 & Regulating Code for Central Hercules Plan

Parking Demand

Impact of Future Developments

Several planned or proposed developments within Hercules can be expected to have a significant impact on the area's overall parking demand. These include:

- Sycamore Main (North)
  - 16 Studio Units
  - 88 1, 2 & 3 BR Units
  - 30,104 sq. ft of retail/commercial space
- Sycamore Main (South)
  - Approximately the same residential space as Sycamore Main (North)
  - Approximately 30,000 sq. ft of retail/commercial space
- Waterfront Development
  - Approximately 1,000 multifamily units
  - Approximately 100,000 sq. ft of commercial space
  - 12,500 sq. ft of commercial space
- Hilltown
  - 640 multifamily units
- New Town Center
  - 280 residential units
  - 56,000 sq. ft of retail space
  - 40,000 sq. ft of office space

Table 2 represents total parking demand, rather than on-street spillover resulting from the developments. The WSA model presumes that a substantial portion of this demand (particularly residential and office demand) will be met by off-street parking supply provision. On-street demand can be approximated by subtracting the number of future off-street parking spaces from the total demand generated by each development.

Table 2. Projected Pipeline Parking Demand by Planned Development

	Predicted Residential			Predicted Retail/Commercial			Predicted Office		
	Total	ST	LT	Total	ST	LT	Total	ST	LT
Sycamore North	173.6	17.36	156.24	87.9	79.1	8.8	---	---	---
Sycamore South	173.6	17.36	156.24	87.6	78.9	8.8	---	---	---
Waterfront	1,700	170	1,530	292	263	29	---	---	---
Hilltown	1,088	109	979	---	---	---	---	---	---
New Town Center	476	48	428	163	147	16	114	34	80
TOTAL	3,611	361	3,250	631	568	63	114	34	80

Source: Wilbur Smith Associates, April 2007.

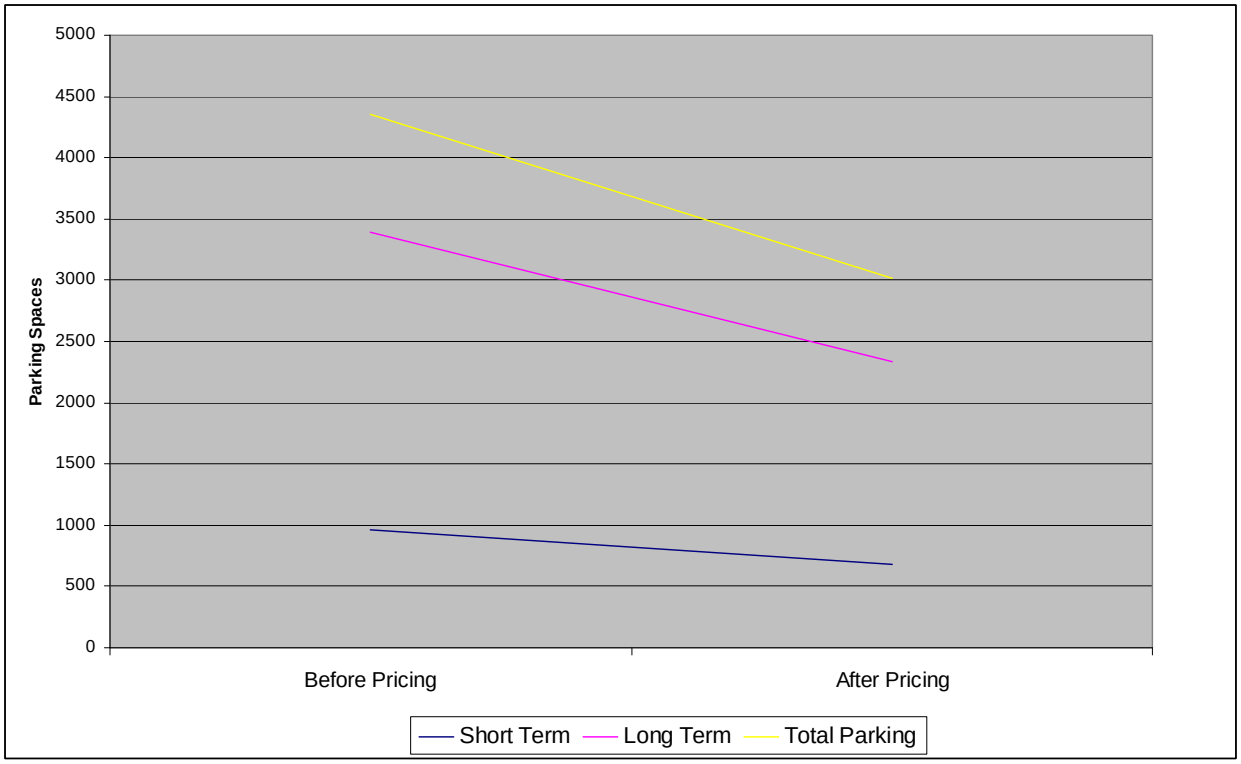
Pricing

The WSA parking model pricing module indicates that parking demand can be reduced significantly if pricing is introduced after projects are built out, as shown in Figure 1. While the Hercules study areas are

yet to be fully built out and demand fully realized, pricing is one element of a comprehensive parking management program that may be introduced once demand reaches a level of practical capacity in the district. If used as part of a complete parking management program, pricing could help control the timing of the eventual/potential need for building parking facilities. The assumptions for the pricing module are summarized in the Table 4.

It is assumed the inconvenience of paying for parking weighs the greatest on short-term parkers and will immediately discourage a small percent due to lack of proper currency or need to stay longer than maximum time limits. Initially, elasticity will be expected to be higher in an area with no pricing experience, and demand reduction will be observed almost immediately. Overall, long term parkers will be the most sensitive to pricing in the on-street spaces and will either choose to park off street or take alternative modes. Alternative mode selection will become a more significant option when the nearby multimodal facility and train station are completed.

Figure 1. Pricing Effect on Parking Demand



Source: Wilbur Smith Associates, April 2007.

Table 4: Price Module Assumptions

		Short Term Parkers	Long Term Parkers
Phase I	Reduction Due to Inconvenience	7%	1%
	Elasticity (low/med/high)	15% medium	30% high
	% Increase	150%	100%

Source: Wilbur Smith Associates, April 2007.

Policy Recommendations

The City of Hercules has several smart growth enabling policies and programs established in the Central Hercules and Sycamore Downtown Parking Management Plan; however the area is not yet fully built out and needs time to grow into its progressive parking policies. As such, there are several smart growth strategies on which the City can focus in the short-term to realize its vision of growth.

Unbundling Parking

The Sycamore Downtown Parking Management Plan recommends a policy of unbundling parking from the cost of a residential unit and commercial space. This is a smart policy in that it allows developers to supply only what they believe the market will bear beyond the minimum parking required for the district in a centralized parking facility. As discussed in the parking demand section, the City should consider providing a range of minimum to maximum parking rates so as not to exceed a desired level of parking. Any parking provided above the minimum requirement can be regulated such that it is required to be shared/centralized. If unbundled from the cost of residential units (rental or owned) the developer would be able to lease the spaces out at market rate to other residents or nearby businesses, or provide short term parking depending on site location/configuration. Stakeholders interviewed were concerned with lender reluctance in financing "unconventional" parking supplies. Unbundling parking but still providing the minimum parking required for a development should help to appease lenders' fears regarding unbundling. Residents that would like more than one space would have the option to lease a second space within the centralized/shared parking supply. As on-street parking becomes more constrained, the City might consider a residential permit parking program (RPPP) to preserve parking for residents and encourage residents that can park off street to do so.

Shared Parking

The parking model assumed a level of shared parking between land uses in the future development areas with uses that can have internal trip capture such as office, residential, commercial, retail and restaurant. As discussed previously, the City could create a Sycamore Downtown Overlay district requirement that parking supply exceeding the Central Hercules Plan minimums be available for shared use. The parking model may be updated and analyzed with parcel level assessor data to help fine tune this analysis. Stakeholders interviewed were concerned that residents would not have sufficient parking if forced to share with other uses. The City could consider a policy of allowing developers to provide one space per residential unit dedicated and the remainder of required supply as centralized/shared. If included with an unbundling policy, it would allow residents to consciously decide how many spaces to use. This would provide the minimum parking but reallocate supply so that it is available to more users when supply is available (i.e. residents are at work).

Parking Improvement District

The City of Hercules has begun to establish the Central Quarter of the City as a vibrant retail and commercial center with plans for economic development, urban design and streetscape improvements. As such, the area has been identified by the Sycamore Downtown Parking Management Plan as a potential parking improvement district. The Sycamore downtown commercial area has also been identified as a potential parking improvement district.

Parking Improvement Districts are based on the concept of a business improvement district, where the funds collected from parking operations and parking fines go to the enhancement of parking conditions in a defined district. Funds may also be raised in the form of assessed taxes or impact fees. A steering committee made up of members of the business community and the transportation commission can be set up to control the collection and direction/dispersal of the funding. Municipalities often put the funding toward a parking structure, but a steering committee can choose to direct the funding toward other desired/needed improvements or amenities within the district. Current examples include Old Pasadena and Redwood City.

Transportation Demand Management (TDM)

As Hercules moves forward in developing the Central Quarter, there is great opportunity to implement supportive policies for its forthcoming transit center, ferry terminal and train station. Envisioned as the new home for WestCAT and BART transit providers, the transit center will be able to provide residents with local service as well as regional connections to San Francisco. Given the proximity of the North Shore Business Park, Transit Demand Programs encouraging carsharing, ridesharing, bike-to-work programs, and transit subsidies have the great potential to be adopted by large employers and reduce the high percentage of single occupancy vehicle use for the area. In this way, the transit center helps to promote some of the City's existing smart growth policies including, "providing effective transit service to the city and the surrounding communities," "help[ing] develop a community that balances housing and job opportunities,"[1] and eliminating the need for residents to leave the community for retail and service needs.

Since a large portion of Hercules' future development will be housing and office space, it is essential to provide these residents and employees with strong incentives to use alternative transportation to and from work when it is available. TDM is an essential element to reducing parking demand. Developers can be required to participate in a transportation demand management program and provide incentives for current employers and residents to participate. A TDM program required in the Sycamore Parking Management Plan can include programs and policies to reduce single occupancy vehicle mode share, such as:

- Providing free or discounted transit passes for new residents and employees
- Require parking cash out for employers that provide free parking
- Subsidizing carpool/rideshare programs and providing reserved carpool spaces
- Requiring secure bicycle parking for every new development
- Employer provided amenities (e.g. showers, valet service)
- Guaranteed ride home programs and late night escorts to transit stops
- Bicycle rentals and/or purchase assistance

Access, Connectivity and Wayfinding

Hercules' Sycamore downtown and waterfront development areas will be in close proximity to the rail station, ferry terminal, and future transit center. The City should explore policies and programs to enhance pedestrian and bike connectivity between these future developments to increase/encourage alternative mode share. Enhancements include but are not limited to:

[1] City of Hercules, General Plan.

- Bicycle and pedestrian circulation within the new development, including good connections to transit facilities;
- Wayfinding program made up of clear, easy to read, consistent signage including the locations of landmarks and key destinations;
- Secure bicycle parking at the train, ferry and bus transit hub and within the development for visitors, residents and employees;
- Pedestrian and bicycle amenities such as pedestrian level street lighting and signage, wider sidewalks, street trees, seating areas, showers & locker facilities, and enhanced crosswalks.